

CLAIMS

What is claimed is:

1 1. A method for reducing -the temperature of all or a portion of the body of a mammalian
2 patient to a temperature at which the patient would exhibit a shivering response, said
3 method comprising the steps of: (a) sensing the temperature of all or a portion of the
4 patient's body; (b) generating a signal based upon said sensed temperature; (c) controlling
5 the temperature of all or a portion of the patient's body based upon said signal; and (d)
6 administering a therapeutically effective amount of a pharmaceutically acceptable
7 preparation of an agent selected from the group consisting of;

8 α 2-adrenoreceptor agonists,
9 non-opioid analgesic monoamine uptake inhibitors,
10 neuropeptides,
11 nefopam, and
12 anticonvulsant agents.

1 2A. A method as in claim 1 further comprising the step of (e) placing a warming blanket on the
2 surface of said patient.

3 2. A method according to Claim 1 wherein the agent administered in Step D comprises an
4 α 2-adrenoreceptor agonist selected from the group consisting of dexmedetomidine;
5 detomidine; medetomidine; clonidine; bromonidine; tizanidine; mivazerol; guanfacine;
6 oxymetazoline; (R)-(-)-3'-(2-amino-1-hydroxyethyl)-4'-fluoro-methanesulfoanilide; 2-
7 [(5-methylbenz-1-ox-4-azin-6-yl)imino]imidazoline; 5-bromo-N-(4,5-dihydro-1H-
8 imidazol-2-yl)-6-quinoxalinamine; 5,6,7,8-tetrahydro-6-(2-propenyl)-4H-thiazolo[4,5-
9 d]azepin-2-amine; 6-ethyl-5,6,7,8-tetrahydro-4H-oxaazolo[4,5-d]azepin-2-amine; 5,6-
10 dihydroxyl-1,2,3,4-tetrahydro-1-naphyl-imidazoline; and pharmaceutically acceptable
11 salts thereof.

1 3. A method according to Claim 2 wherein the α 2-adrenoreceptor agonist is selected from
2 the group consisting of dexmedetomidine and pharmaceutically acceptable salts of
3 dexmedetomidine.

- 1 4. A method according to Claim 1 wherein the agent administered in Step D comprises a a
2 non-opioid analgesic monoamine uptake inhibitor selected from the group consisting of
3 nefopam; tramadol; and pharmaceutically acceptable salts thereof.
- 1 5. A method according to Claim 4 wherein the non-opioid analgesic monoamine uptake
2 inhibitor is selected from the group consisting of nefopam and a pharmaceutically
3 acceptable salts of nefopam.
- 1 6. A method according to Claim 1 wherein the agent administered in Step D comprises a
2 neuropeptide selected from the group consisting of neurotensin; neurotensin analogs;
3 bombesin; neuromedin; dermorphin; D-ala-deltorphan; and pharmaceutically acceptable
4 variants thereof.
- 1 7. A method according to Claim 6 wherein the neuropeptide is selected from the group
2 consisting of neurotensin and pharmaceutically acceptable variants of neurotensin .
- 1 8. A method according to Claim 1 wherein the agent administered in Step D comprises an
2 anticonvulsant agent.
- 1 9. A method according to Claim 8 wherein the anticonvulsant agent is selected from the
2 group consisting of:
- 3 hydantoins;
- 4 anticonvulsant barbiturates;
- 5 deoxybarbiturates;
- 6 iminostilbenes;
- 7 succinimides;
- 8 oxazolidinediones;
- 9 benzodiazepines;
- 10 acetylureas;
- 11 sulfonamides;
- 12 carbonic anhydrase inhibitors;
- 13 gabapentin;

14 lamotrigine;
15 primidone;
16 valproate;
17 pro-drugs or metabolic precursors of any such antoconvulsant agents; and,
18 possible combinations thereof.

1 10. A method according to Claim 9 wherein the hydantoinis comprise phenytoin.

1 11. A method according to Claim 9 wherein the anticonvulsant barbiturates compromise
2 Phenobarbital.

1 12. A method according to Claim 9 wherein the deoxybarbiturates comprise primidone.

1 13. A method according to Claim 9 wherein the iminostilbenes comprise carbamazepine.

1 14. A method according to Claim 9 wherein the succinimides comprise ethosuximide,
2 methsuximide and phensuximide.

1 15. A method according to Claim 9 wherein the oxazolidinediones comprise trimethadione
2 and paramethadione.

1 16. A method according to Claim 9 wherein the benzodiazepines comprise diazepam,
2 chlordiazeppoxide, oxazepam, chlorazepate, nitrazepam, clonazepam and lorazepam.

1 17. A method according to Claim 9 wherein the acetylureas comprise phenacemide and
2 pheneturide.

1 18. A method according to Claim 9 wherein the sulfonamides and carbonic anhydrase
2 inhibitors comprise acetazolamide, sulthiame and bromide.

1 19. A method according to Claim 9 wherein the anticonvulsant agent comprises a metabolic
2 precursor of phentoin.

1 20. A method according to Claim 19 wherein the metabolic precursor of phentoin comprises
2 fosphenytoin.

1 21 A method according to Claim 20 wherein fosphenytoin is aministered in two doses, 15
2 minutes apart.

- 1 22. A method according to Claim 21 wherein each dose contains approximately 20 mg of
2 fosphenytoin per kg of body weight.
- 1 23. A method according to Claim 20 wherein fosphenytoin is administered intravenously at
2 an approximate rate of 150 mg per minute.
- 1 24. A method according to Claim 1 wherein the temperature controlling step (c) includes
2 lowering the temperature below the set point temperature.
- 1 25. A method according to Claim 1 wherein the temperature controlling step (c) includes
2 raising the temperature from an initial temperature below the set point temperature.
- 1 26. A method according to Claim 9 wherein the temperature controlling step (c) includes
2 raising the temperature at a predetermined rate.
- 1 27. A method according to Claim 9 wherein the temperature controlling step (c) includes
2 maintaining the temperature at a stable temperature below the set point temperature.
- 1 28. A method according to Claim 11 wherein the stable temperature is normothermia.
- 1 29. A method according to Claim 1 wherein the temperature controlling step (c) includes
2 placing a heat exchanger into the patient's vasculature and using the heat exchanger to
3 cool the patient's blood, thereby resulting in cooling of all or a portion of the patient's
4 body.
- 1 30. A method according to Claim 13 wherein the heat exchanger comprises a catheter that
2 has a heat exchange region.
- 1 31. A method according to Claim 30 wherein the heat exchange region of the catheter
2 comprises a balloon through which heat exchange fluid is circulated.